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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/517,368

12/10/2004

Peter Bassler

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3963

22850

7590

04/04/2008

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER

MANOHARAN, VIRGINIA

ART UNIT

PAPER NUMBER

1797

NOTIFICATION DATE

DELIVERY MODE

04/04/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/517,368	<b>Applicant(s)</b> BASSLER ET AL.	
	<b>Examiner</b> Virginia Manoharan	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/10/05</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors, e.g., typographical, grammar, idiomatic, syntax and etc. Applicants' cooperations are requested in correcting any errors of which applicants may become aware in the specification.

The disclosure is objected to because the Brief Description Of The Drawings is missing from the specification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a). The claims or at least part of the claims are recited in passive rather than active steps, e.g., the recitations of "by distillation" and "by reaction of a hydroperoxide with an organic compound" in claim 11, lines 1 and 2 respectively .

b). It is unclear which oxirane is being referred to in claim 15, line 2, the oxirane in line 2, or the oxirane taken as intermediate boiler in line 4 of claim 11. See also claim 20.

c). The used of abbreviation in claims is improper if not previously identified in full name and not subsequently put in parenthesis. It is unclear, for example, what constitute the claimed “zeolite TS-1 recited in claims 19 and 23.

d). Claim 27 is incomplete for omitting essential structural cooperative relationships e.g., of the reactors relative to the other elements in the apparatus in terms of structure, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

e). The thermally coupled columns recited in claim 29 is at odds with the claim from which it ultimately depends, i.e., claim 11. Claim 11 recites a “dividing wall column”. See also claims 12 and 25. The configuration of dividing wall columns is distinct from thermally coupled columns.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 11-29 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 7,332,634. Although the conflicting claims are not identical, they are not patentably distinct from each other because the specific propylene glycol of the above patent is the key component of the instant oxirane, noting page 17 of the specification.

Claims 11-29 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 6,479,680 in view of Rust et al (6,958,111).

The difference seen is that the instant claim 11 recites "wherein the crude oxirane is separated in a dividing wall column into low-,intermediate- and high-boiling fractions and the oxirane is taken off as intermediate boiler at the side offtake". However, said difference does not constitute a patentable distinction as discussed below relative to the Rust's reference.

Claims 11-29 rejected on the ground of nonstatutory double patenting over claims 1-17 and claims 1-15 of U.S. Patent No. 7,332,634 and U. S. Patent No. 6,479,680 respectively since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, interalia, as follows: a process comprising at least the steps (i) to (iii):  
(i) reaction of the hydroperoxide with the organic compound to give a product mixture comprising the reacted organic compound and unreacted hydroperoxide,  
(ii) separation of the unreacted hydroperoxide from the mixture resulting from step (i),  
(iii) reaction of the hydroperoxide which has been separated off in step (ii) with the organic compound.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' Disclosure of Admitted Prior art as illustrated e.g., by WO00/07965 in view of Rust et al (6,958,111).

Applicants admit at page 1, lines 23-33 thru page 2, lines 1-3 that "the multistage process described in WO 00/07965 provides for the reaction of the organic compound with a hydroperoxide to comprise at least the steps (i) to (iii):

(i) reaction of the hydroperoxide with the organic compound to give a product mixture comprising the reacted organic compound and unreacted hydroperoxide,  
(ii) separation of the unreacted hydroperoxide from the mixture resulting from step (i),  
(iii) reaction of the hydroperoxide which has been separated off in step (ii) with the organic compound. Accordingly, the reaction of the organic compound with the hydroperoxide takes place in at least two steps (i) and (iii), with the hydroperoxide separated off in step (ii) being reused in the reaction.

Applicants further admit at page 2, lines 5-13 that reactions in steps (i) and (iii) are preferably carried out in two separate reactors, preferably fixed-bed reactors, with the reaction of step (i) preferably taking place in an isothermal reactor and the reaction of step (iii) taking place in an adiabatic reactor. This process can be used generally for the reaction of alkenes with hydroperoxides to form oxiranes. The hydroperoxide used in this sequence is preferably hydrogen peroxide, and the organic compound is preferably brought into contact with a heterogeneous catalyst during the reaction. Compare e.g., with claims 17 and 18.

The process admitted to be known by applicants differs from the claimed invention in that claim 11, for example, recites “wherein the crude oxirane is separated in a dividing wall column into low-, intermediate- and high-boiling fractions and the oxirane is taken off as intermediate boiler at the side offtake”.

However, said difference does not constitute a patentable distinction inasmuch as it is well-documented in the art that for the fractionation of some multicomponent mixtures the use of a dividing wall column is found to be advantageous. To replace the conventional column used in the purification of oxirane, admitted to be known by applicants, with a dividing wall column, in order to arrive at the claimed invention, would have been obvious to one of ordinary skill in the art to achieve the predictable result of obtaining the advantages that can be derived in terms of energy consumption and capital costs as taught by Rust, noting e.g., col. 1, lines 1-61. [It is noteworthy that Applicants stipulate at page 2, lines 30-34 that “the purification by distillation carried out according to the prior art is carried out in conventional columns with a side offtake or columns connected in series. This necessitates relatively complicated apparatus and a relatively high energy consumption, since the oxirane has to be distilled a number of times to achieve the abovementioned high purity”].

Claims 14 & 20 directed to temperatures and pressures; claims 15, 21 & 24 directed to concentration by % by weight; and claims 20 & 28 including the numbers of theoretical plates all are deemed to be result-effective -variables which ordinarily are within the skilled of the art.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a). Bassler et al discloses a method for the continuous production of propylene glycols.
- b). The EP' 367 abstract discloses a dividing wall column.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to V. Manoharan whose telephone number is (571) 272-1450.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Virginia Manoharan/  
Primary Examiner, Art Unit 1797



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